REMARKS

Claims 1, 5 and 7 have been amended and claims 2 and 8 have been cancelled without prejudice or disclaimer. Independent claims 1 and 7 have been amended to incorporate the subject matter of claims 2 and 8, respectively. Claims 1, 3-7 and 9-20 are pending in this application. Claims 1, 7, 11, 16, 19 and 20 are the independent claims. No new matter is presented.

REJECTIONS UNDER 35 U.S.C. §103:

Claims 1-20 have been rejected under 35 U.S.C. §103(a) as being unpatentable over admitted prior art in view of Halter (U.S. Patent No. 6,434,203).

Applicants respectfully traverse this rejection for at least the following reason.

Regarding the rejection of independent claim 1, it is noted that claim 1 recites a soft demodulation method, comprising: calculating partial sums for a unit of each predetermined number of bits of a codeword received from a channel; calculating a value of each entry of a decoding table by referring to the partial sums; and detecting a maximum among values of all entries of the decoding table and calculating a log-likelihood ratio (LLR) using the detected maximum, wherein, the partial sums for the unit of each predetermined number of bits of the codeword is calculated by using reference entries, and each of the reference entries is comprised of a combination of some bits of each of the entries of the decoding table.

The Office Action relies on Applicants' admitted prior art for allegedly disclosing "calculating a value of each entry of a decoding table" and "detecting a maximum among values of all entries of the decoding table and calculating a log-likelihood ratio (LLR) using the detected maximum." The Office Action recognizes that Applicants' admitted prior art differs from the claimed invention in that it does not teach "calculating partial sums for a unit of each predetermined number of bits of a codeword received from a channel, and calculating a value of each entry of a decoding table by referring to the partial sums."

Therefore, the Office Action relies on Halter for such teachings and in particular in FIG. 5, item 218 and column 5 line 26 to column 6, line 41. Halter discloses a decoding technique applicable to turbo or iterative coding techniques (abstract). Halter further discloses a turbo

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decoder including a multiplexor 214 outputting soft decision data, stored in one of the two channel deinterleaver memory banks, to a partial sum circuit 218 (column 5, lines 30-32). Additionally, the partial sum circuit 218 also receives priori probability (APP) data from APP memory 170. The APP values are estimates of the data transmitted based on a previous decoding iteration (column 5, lines 58-65).

Accordingly, although Halter discloses a partial sum circuit 218, for calculating a partial sum, the circuit disclosed by Halter performs a partial sum of soft decision data and priori probability (APP) data. In other words, Halter discloses performing a partial sum of all received data, that is, Halter discloses performing a partial sum along the lines of the prior art where all received data is summed up (see paragraphs [0009] through [0021] of the specification). Therefore, by performing a partial sum of all of the received data, Halter discloses a circuit along the prior art where the size of the APP decoding table used for soft demodulation increases, thus making the APP decoding table remarkably complicated.

As noted above, contrary to Halter, independent claim 1 recites calculating partial sums for a unit of each predetermined number of bits of a codeword and calculating a value of each entry of a decoding table by referring to the partial sums. In other words, independent claim 1 recites calculating partial sums on units including predetermined number of bits, not on all received data as taught by Halter. Therefore, Halter fails to teach the features alleged in the Office Action and thus fails to cure the deficiencies of the prior art.

Accordingly, Applicants respectfully assert that the rejection of independent claim 1 under 35 U.S.C. §103(a) should be withdrawn because neither Applicants' admitted prior art, nor Halter, whether taken singly or combined, teach or suggest each feature of independent claim 1.

Furthermore, Applicants respectfully assert that the rejection of dependent claims 3-6 under 35 U.S.C. §103(a) should be withdrawn at least because of their dependence from claim 1, and the reasons set forth above, and because the dependent claims include additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claims 3-6 also distinguish over the prior art.

Regarding the rejections of independent claims 7, 11, 16, 19 and 20, it is noted that these claims recite substantially similar subject matter as claim 1. Thus, the rejections of these claims are also traversed for the reasons set forth above.

Regarding the rejection of dependent claims 9-10, 12-15 and 17-18, Applicants

respectfully assert that the rejection of these claims under 35 U.S.C. §103(a) should be withdrawn at least because of their dependence from claims 7, 11 and 16, and because the dependent claims include additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claims 8-10, 12-15 and 17-18 also distinguish over the prior art.

Regarding claims 2 and 8, it is noted that these claims have been cancelled without prejudice or disclaimer. Accordingly, the rejection of claims 2 and 8 is moot.

CONCLUSION:

In view of the foregoing amendments, arguments and remarks, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. An early action to that effect is courteously solicited.

Should any questions remain unresolved, the Examiner is requested to telephone Applicants' attorney at the Washington DC office at (202) 216-9505 ext. 230.

To the extent necessary, Applicants petition for an extension of time under 37 CFR §1.136. If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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